BEFORE THE

# Federal Communications Commission

WASHINGTON, D.C.

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| In the Matter of | ) | |
| | ) | DKT 95-42 |
| Request by WavePhore, Inc. for a Clarification of the Television Rules to Allow Digital Data Transmission Within the Video Portion of Television Station Transmissions | ) | Public Notice DA 94-67 |



## REPLY COMMENTS OF WAVEPHORE, INC.

WavePhore, Inc. ("WavePhore"), by its attorneys, hereby responds to the comments filed in response to the above-referenced Public Notice. WavePhore continues to urge the Commission to clarify that television broadcasters are free to use WavePhore's new TVT1 technology to develop and provide important new digital services to the American public. There is no justification for a delay in such a ruling. The record to date, based on thousands of hours of tests on several operating television stations and critical viewing by experts, establishes beyond dispute that WavePhore's technology does not cause visible degradation to the standard NTSC video signal. WavePhore is not seeking any exclusivity for its technology. If proponents of other new technologies are able to make the same kind of extensive showing as WavePhore has made that their technology does not degrade the quality of a broadcaster's video signal, the

Commission should permit broadcasters to use all such technologies to provide new, ancillary services.

## Background

The Public Notice sought comments on a request by WavePhore that television licensees be permitted to use WavePhore's TVT1 technology to provide data broadcast services without prior approval from the Commission, on the basis of WavePhore's extensive showing that TVT1 would not cause visible degradation to an NTSC signal. WavePhore's showing included: (i) statements of the Chief Engineers of the two Phoenix television stations (one a VHF station and the other a UHF station) on which WavePhore had conducted several months of experiments and (ii) a critical viewing report by Warren Powis of Cohen, Dippell and Everist, Consulting Engineers, a television engineer who has participated in critical viewing tests of Advanced Television systems. In addition, WavePhore demonstrated TVT1 during the recent NAB convention in Las Vegas, using KTNV, Channel 13, the local ABC affiliate. The demonstration, which was viewed by thousands of the most critical video viewers in the world, provided further proof that TVT1 can be used to provide high-speed data without causing perceptible degradation to a broadcaster's video signal.

WavePhore's request urged the Commission to permit broadcasters to use their NTSC signals to provide ancillary high-speed digital data broadcasting as a spectrum-efficient way of

quickly expanding the communications services available to the American public.

Two parties submitted comments in response to the Public Notice, Radio Telecom & Technology Inc. ("RTT") and The Association for Maximum Service Television, Inc. ("MSTV"). Both RTT and MSTV support the general principle of permitting broadcasters to fully use the broadcast television signal to include the provision of new data service. RTT, which is the proponent of another technology that might be used to provide data broadcast services, supports WavePhore's request but asks the Commission not to issue a ruling limited to WavePhore's specific technology. RTT also asks the Commission to address WavePhore's proposed insertion of data within the NTSC signal in the range between 3.9 MHz and 4.2 MHz. RTT suggests that roll-off of the video beginning at 3.9 MHz might adversely affect the monochrome fidelity of the NTSC signal and make the chroma subcarrier sidebands more asymmetric.[1/]

MSTV urges the Commission to be mindful of the ongoing standard-setting process of the National Data Broadcasting Committee ("NDBC").[2/] MSTV points to teletext and AM stereo as

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1/ RTT also notes that the use of the NTSC signal for data broadcasting is a "new technology" within the meaning of Section 7 of the Communications Act and, as such, should be encouraged by the Commission. WavePhore agrees with this interpretation of the Act.

2/ WavePhore supports and has been intensely involved in the efforts of the NDBC to reach consensus on a single data standard. However, as discussed more fully below, it is (continued...)

examples of advances in broadcast technology that it considers to have been impeded due to the absence of an industry standard. MSTV also cites to the Commission's endorsement of the Philips ghost-canceling technology as a successful process for the implementation of new technology. MSTV suggests that the Commission might treat the WavePhore clarification request as a petition for rulemaking and wait for the results of the NDBC process before adopting any new rules.

## Discussion

As was made abundantly clear at the recently-concluded annual convention of the National Association of Broadcasters, the broadcast industry worldwide is approaching a critical stage in the ongoing and broad transformation from analog to digital, a transition that will have far-reaching consequences for the industry and for the public. The guiding principle to date for this transition has been that any new technology should improve and not impair the basic broadcast service on which the American public has come to rely. This was the underlying principle in the several prior cases that WavePhore cited in its request.

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2/(...continued)
impossible to say how long that process will take and there will certainly be no prejudice to that process caused by the discrete uses of the TVT1 technology initially planned by WavePhore. Given the transitional nature of NTSC data broadcasting in an impending HDTV world, any delay in implementation would not only harm WavePhore, but might prevent the initiation of NTSC data broadcasting in any form.

WavePhore has shown that its TVT1 technology is consistent with this principle; TVT1 provides broadcasters with the opportunity to provide new and important services without detracting from their provision of high-quality video broadcasting.

Time is of the essence in this matter. In order for TVT1 to become a widespread commercial reality, a process which at best will take several years, there must be substantial additional investment of time and money, investments that will be hampered significantly by any delay in processing WavePhore's request. Without reasonable certainty that broadcasters will be permitted to deploy TVT1, manufacturers will be reluctant to invest in the miniaturization of the TVT1 decoders and the integration of the decoders into computers and television sets, and broadcasters and others will be reluctant to invest in the development and marketing of customer applications. There are long lead times on all such efforts; they must begin as soon as possible if broadcasters are to compete in the provision of digital data services.[3/]

Even though it must start immediately for it to be effective, the adoption of this new technology will be gradual. WavePhore anticipates that early use will be for relatively small communications networks, such as distribution among schools of

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3/ Telephone and cable companies, ITFS and MMDS licensees, and mobile service providers may provide digital data services relatively freely today. Indeed, satellite system operators and cable operators (including wireless cable operators) may use TVT1 today to transmit digital data in their NTSC signals without any need for Commission approval.

educational materials and internal communications from a local bank's headquarters to its branch locations. The technology will reach a more widespread consumer level only after several years, once equipment manufacturers have begun more widespread integration of TVT1 decoders into their television sets and computers.

As for RTT's concern that transmission of data between 3.9 MHz and 4.2 MHz might cause degradation to the NTSC signal, the fact is that any change in the signal will not be visible to the viewing public. WavePhore's thousands of hours of testing have proven this.[4/] Moreover, broadcasters have a tremendous stake in maintaining a high-quality video signal. It defies credibility to think that broadcasters will risk alienating hundreds of millions of existing viewers and tens of thousands of existing advertisers by transmitting inferior quality signals in order to develop what is now a largely speculative and clearly ancillary new business.

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4/ Other technologies cause very real degradation to broadcast signals, yet their use is not prohibited by the Commission. The most prominent of these is cable retransmission, which causes a degradation problem that is far worse than anything that has even been theoretically suggested would be caused by TVT1. No one suggests, however, that cable operators should not be permitted to retransmit the signals of broadcast stations.

The fact that widespread consumer use of TVT1 is not likely to be pervasive for several years should provide additional comfort to the Commission that, even if WavePhore's showing regarding the absence of degradation were somehow flawed, the Commission will be able to revise its judgment without adversely affecting large numbers of consumers.

It has been suggested that, while TVT1 does not itself cause degradation to an NTSC signal, there may be cumulative degradation from TVT1 and other similar technologies that might be proposed after TVT1's request is acted on by the Commission. Again, however, there is no real evidence that this is an actual problem. WavePhore respectfully suggests that if and when there are other subsequent proposals for similar technologies, their proponents should proceed as WavePhore has done, by submitting a vigorous showing as to the absence of degradation. Such a showing should be conducted over several months on several different television stations, including VHF and UHF stations, and should include critical viewing tests by experts. If there is a theoretical possibility that the new technology would degrade the NTSC signal of a station that is already using TVT1, the Commission might require a showing regarding the consequences of using both the two technologies simultaneously. WavePhore certainly will cooperate in any such requirement. WavePhore is not seeking any exclusivity relative to RTT or any other technology; it is merely seeking to clarify that broadcasters may move forward in the development of new high-speed digital services, on the basis of WavePhore's strong showing with regard to TVT1 that this flexibility will help and not hurt the American public.

WavePhore disagrees with the suggestion of MSTV that the Commission should wait for the resolution of the NDBC process or conduct a broad rulemaking before acting on WavePhore's request.

WavePhore supports the NDBC standard-setting process, but that process will take time to conclude, after which the Commission would still need to consider its results. In the meantime, broadcasters should not be impaired in their ability to use the TVT1 technology. TVT1 is not like AM stereo or ghost canceling.[5/] Unlike these technologies, the transmission of digital data does not require a single or mandated approach by all broadcasters, particularly during the initial development phase of the technology. There might well be different methods for broadcasters to transmit digital data. Some broadcasters might continue to use the Vertical Blanking Interval, while others might use TVT1 or some other new technology, or some combination of these different technologies. Particularly at this stage, there is no need either for the broadcast industry to agree on a single standard or for the Commission to set a standard.

The delay of up to two or more years that would result from waiting for the NDBC is particularly hard to justify with regard to a technology that is to be used along with NTSC signals, since the Commission intends to phase out broadcast of NTSC signals in the relatively near future in favor of digital High Definition Television. TVT1 is a transitional technology. If TVT1 is to be

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5/ The development of data broadcasting services may be more analogous to teletext, which MSTV characterizes as having been stymied by the absence of standards. It is not clear, however, that the absence of mandated teletext standards was the culprit in teletext's failure to develop.

truly useful to broadcasters in the United States, it must be implemented soon.

There also is nothing to be gained by conducting a rulemaking to resolve this issue other than to delay the introduction of new technology. The fundamental rule is already well-established -- that broadcasters may use their facilities for ancillary businesses if the operation of those businesses does not detract from the broadcasters' principal obligation.[6/] What more needs to be resolved in a rulemaking at this point? Perhaps other issues will arise as data broadcast services develop, but no one has yet suggested what those issues might be, let alone that they may not be resolved successfully if and when they do arise.

Grant of WavePhore's declaratory ruling request will also save Commission resources, since one alternative regulatory approach would be for individual licensees to apply piecemeal to the Commission for clarification that they may use TVT1 technology. This might well result in hundreds of television stations each filing such requests, a process which is guaranteed

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6/ See, e.g., Amendments of Part 2 and 73 of the Commission's Rules Concerning Use of Subsidiary Communications Authorizations, 53 RR2d 1519 (1983); Amendment of Parts 2, 73 and 76 of the Commission's Rules to Authorize the Transmission of Teletext by TV Stations, 57 RR2d 842 (1985); Amendment of Parts 2, 73 and 76 of the Commission's Rules to Authorize the Offering of Data Transmission Services on the Vertical Blanking Interval by TV Stations, 57 RR2d 832 (1985).

to lead to delay and the unnecessary use of Commission personnel.

## Conclusion

Therefore, WavePhore urges the Commission to proceed promptly with resolution of this matter, based on the strong showing by WavePhore that TVT1 technology may be used by broadcasters to develop new, ancillary digital services without causing visible degradation to their standard NTSC video signals. A contrary conclusion would deprive the public of an important service, and leave broadcasters without the technological bridge they need to enter the Digital Age.

Respectfully submitted,

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Dated: March 28, 1994

**Affidavit**

I, Dr. Charles Jungo, hereby state as follows:

I am Executive Vice President and Chief Technical Officer of Wavephore, Inc. I have read and am familiar with the statements made in the foregoing "Reply of WavePhore, Inc." Those statements are true and correct to the best of my knowledge, information and belief.

Charles Jungo

March 25, 1994

**CERTIFICATE OF SERVICE**

I, Rhea Lytle, hereby certify that I have this 28th day of March, 1994, mailed by first class United States mail, postage prepaid, copies of the foregoing "Reply Comments of WavePhore, Inc." to the following:

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